



IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

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3/26/04

Inventor(s): Paul C. Coffin, et al.

Confirmation No.: 6517

Application No.: 09/624,798

Examiner: J. A. Watko

Filing Date: 07/24/2000

Group Art Unit: 2652

Title: RECONFIGURABLE CARTRIDGE PROCESSING MODULE FOR STORING CARTRIDGE  
RECEIVING DEVICES IN A DATA STORAGE SYSTEM

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The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$330.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( ) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

( ) one month	\$110.00
( ) two months	\$420.00
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( ) four months	\$1480.00

( ) The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

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Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:  
Paul C. Coffin, et al.

Serial No.: 09/624,798

Filing Date: 07/24/2000

For: RECONFIGURABLE CARTRIDGE  
PROCESSING MODULE FOR STORING  
CARTRIDGE RECEIVING DEVICES IN  
A DATA STORAGE SYSTEM

Docket No.: 10001664-1

Confirmation No.: 6517

Examiner: J. A. Watko

Group Art Unit: 2652

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I hereby certify that the attached **Transmittal of Appeal Brief (in duplicate); Appeal Brief in triplicate (33 pages including Table of Contents, Table of Authorities, and Appendices A and B with one (1) reference document); and Post cards for return by the United States Patent and Trademark Office**, are all being deposited with the United States Postal Service addressed to the Commissioner for Patents, Mail Stop Appeal Brief-Patents, P.O. Box 1450, Alexandria, VA 22313-1450, via Express Mail No. EL 964692621 US, on this 12th day of March 2004.

By: Bruce E. Dahl  
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EL 964692621US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:

COFFIN, Paul, C. et al.

Serial No. 09/624,798

Filing Date: July 24, 2000

For: RECONFIGURABLE CARTRIDGE  
PROCESSING MODULE FOR STORING  
CARTRIDGE RECEIVING DEVICES IN  
A DATA STORAGE SYSTEM

Atty Dkt: 10001664-1

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) Examiner: Watko, J.A.  
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) Group Art Unit: 2652  
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APPEAL BRIEF

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:	)	
	)	
COFFIN, Paul, C. et al.	)	Examiner: Watko, J.A.
	)	
Serial No. 09/624,798	)	
	)	
Filing Date: July 24, 2000	)	Group Art Unit: 2652
	)	
For: RECONFIGURABLE CARTRIDGE	)	
PROCESSING MODULE FOR STORING	)	Confirmation No.: 6517
CARTRIDGE RECEIVING DEVICES IN	)	
A DATA STORAGE SYSTEM	)	
	)	
Atty Dkt: 10001664-1	)	

**APPEAL BRIEF**

To: Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in response to the final rejections of the claims dated October 14, 2003. A Notice of Appeal was filed on January 12, 2004.

**REAL PARTY-IN-INTEREST**

The assignee of the entire right, title, and interest in the patent application is Hewlett-Packard Development Company.

**RELATED APPEALS AND INTERFERENCES**

There are currently no related appeals or interferences known to Appellants, Appellants'

legal representative, or the assignee which will directly affect, or be directly affected by, or have a bearing on, the Board's decision.

### **STATUS OF THE CLAIMS**

Claims 1-6 and 10-20 are pending in the application. Claims 1-6 and 10-20 currently stand rejected. The rejections of claims 1-6 and 10-20 are appealed.

### **STATUS OF AMENDMENTS**

No amendments were filed or entered subsequent to the final office action mailed on October 14, 2003.

### **SUMMARY OF INVENTION**

This invention relates to cartridge storage systems in general and more specifically to a cartridge storage system having a reconfigurable cartridge processing module. The invention as claimed is summarized below with reference to the independent claims which contain reference numerals and reference to the specification and drawings. All references are shown in the application at least where indicated herein.

**(Claim 1)** A reconfigurable cartridge processing module (10; 14; Figures 1 & 2; p.6 line 21 - p.7 line 4; p.8 line 30 - p.9 line 16; p.10 line 34 - p.11 line 25; p.12 line 18 - p.13 line 26; p.25 lines 9-25) for use in a data storage system (p.10 line 34 - p.11 line 15; p. 13 lines 27 - p.14 line 15), comprising:

a frame (18, Figures 1 & 2; p.14 line 16 - p.16 line 8) said frame (18) having a lower plate (22, Figures 3 & 6; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) and an upper plate (20, Figures 1,



2, & 5; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) positioned in generally parallel, spaced-apart relation (Figures 1-3; p.14 line 33 - p.15 line 15), said lower and upper plates (22 and 20) of said frame (18) having a plurality of sets of mounting locations (28, 30, 32, p.14 line 16-32; p.16 lines 9-28) provided thereon so that said frame (18) defines a first component configuration (12, Figure 1, p.7 lines 5-26; p.14 line 16 - p.15 line 15) and a second component configuration (14, Figure 2, p.7 line 27 - p.8 line 2; p.14 line 16 - p.15, line 15), the first component configuration (12) comprising:

a first cartridge receiving device (34, Figures 1 & 4; p.8 lines 3-14; p.17 line 9- p.19 line 16; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 lines 15-28) mounted to a first set (28, Figure 5) of the plurality of sets of mounting locations (28, 30, 32; p.14 lines 16-32; p.16 lines 9-28) provided on said frame (18) so that said first cartridge receiving device (34) is located at a first position (38; Figure 1; p.7 lines 5-26; p.18 line 27 - p.19 line 16; p.21 line 30 - p.22 line 24) within said frame (18); and

a second cartridge receiving device (36, Figures 1 & 4; p. 8 lines 3-14; p.19 line 26 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 line 31 - p.5 line 8) mounted to a second set (30, Figure 1; p. 21 lines 2-29) of the plurality of sets of mounting locations (28, 30, 32; p.14 lines 16-32; p.16 lines 9-28) provided on said frame (18) so that said second cartridge receiving device (36) is located at a second position (40; Figures 1 & 4; p.21 lines 2- p.22 line 24) within said frame (18), said first and second cartridge receiving devices (34 and 36) together occupying a volumetric space (p.8 line 30 - p.9 line 16) within said frame (18), wherein said first and second cartridge receiving devices (34 and 36) are located (p.7 lines 5-26; p.8 line 30 - p.9 line 16;

p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p. 2 line 23 - p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the first component configuration (12);

the second component configuration (14) comprising a third cartridge receiving device (46; Figure 2; p.7 line 27 - p.8 line 2; p.22 line 34 - p.25 line 8) mounted to a third set (32, Figure 2) of the plurality of sets of mounting locations (28, 30, 32; p.7 line 27 - p.8 line 2; p.14 lines 16-32; p.16 lines 9-28; p.24 lines 3-24) provided on said frame (18), said third cartridge receiving device (46) occupying substantially the same volumetric space (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) within said frame (18) as is occupied by said first and second cartridge receiving devices (34 and 36) in said first component configuration (12), wherein said third cartridge receiving device (46) is located (Figure 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16; 2<sup>nd</sup> Amend. p.2 line 23 - p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the second component configuration (14).

**(Claim 10)** A reconfigurable cartridge processing module (10; 14; Figures 1 & 2; p.6 line 21 - p.7 line 4; p.8 line 30 - p.9 line 16; p.10 line 34 - p.11 line 25; p.12 line 18 - p.13 line 26; p.25 lines 9-25) for use in a data storage system (p.10 line 34 - p.11 line 15; p. 13 lines 27 - p.14 line 15), comprising:

a frame (18, Figures 1 & 2; p.14 line 16 - p.16 line 8), said frame (18) having a lower plate (22, Figures 3 & 6; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) and an upper plate (20, Figures 1, 2, & 5; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) positioned in generally parallel, spaced-apart relation (Figures 1-3; p.14 line 33 - p.15 line 15), said lower and upper plates (22 and 20) of said

frame (18) having a plurality of sets of mounting locations (28, 30, 32, p.14 line 16-32; p.16 lines 9-28) provided thereon so that said frame (18) defines a first component configuration (12, Figure 1, p.7 lines 5-26; p.14 line 16 - p.15 line 15) and a second component configuration (14, Figure 2, p.7 line 27 - p.8 line 2; p.14 line 16 - p.15, line 15), the first component configuration (12) comprising:

a first cartridge receiving device (34, Figures 1 & 4; p.8 lines 3-14; p.17 line 9- p.19 line 16; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 lines 15-28) mounted to a first set (28, Figure 5) of the plurality of sets of mounting locations (28, 30, 32; p.14 lines 16-32; p.16 lines 9-28) provided on said frame (18) so that said first cartridge receiving device (34) is located at a first position (38; Figure 1; p.7 lines 5-26; p.18 line 27 - p.19 line 16; p.21 line 30 - p.22 line 24) within said frame (18); and

a second cartridge receiving device (36, Figures 1 & 4; p. 8 lines 3-14; p.19 line 26 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 line 31 - p.5 line 8) mounted to a second set (30, Figure 1; p. 21 lines 2-29) of the plurality of sets of mounting locations (28, 30, 32; p.14 lines 16-32; p.16 lines 9-28) provided on said frame (18) so that said second cartridge receiving device (36) is located at a second position (40; Figures 1 & 4; p.21 lines 2- p.22 line 24) within said frame (18), the second position (40) being located (p.7 lines 5-26; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p. 2 line 23 - p.3 line 10) adjacent the first position (38) so that said second cartridge receiving device (36) is located alongside (p.7 lines 5-26; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p. 2 line 23 - p.3 line 10) said first cartridge receiving device (34), wherein said first and second cartridge receiving devices (34 and 36) are located (p.7 lines 5-26; p.8 line 30 - p.9 line 16; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p. 2 line 23 -

p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the first component configuration (12); the second component configuration (14) comprising a third cartridge receiving device (46; Figure 2; p.7 line 27 - p.8 line 2; p.22 line 34 - p.25 line 8) mounted to a third set (32, Figure 2) of the plurality of sets of mounting locations (28, 30, 32; p.7 line 27 - p.8 line 2; p.14 lines 16-32; p.16 lines 9-28; p.24 lines 3-24) provided on said frame (18), said third cartridge receiving device (46) in said second component configuration (14) substantially replacing (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) said first and second cartridge receiving devices (34 and 36) in said first component configuration (12) and vice-versa (p.9 lines 17-25; p.25 line 26 - p.26 line 5), so that a volumetric space (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) occupied by said first and second cartridge receiving devices (34 and 36) in said first component configuration (12) is substantially occupied (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) by said third cartridge receiving device (46) in said second component configuration (14) and vice-versa (p.9 lines 17-25; p.25 line 26 - p.26 line 5), wherein said third cartridge receiving device (46) is located (Figure 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16; 2<sup>nd</sup> Amend. p.2 line 23 - p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the second component configuration (14).

**(Claim 14)** A reconfigurable cartridge processing module (10; 14; Figures 1 & 2; p.6 line 21 - p.7 line 4; p.8 line 30 - p.9 line 16; p.10 line 34 - p.11 line 25; p.12 line 18 - p.13 line 26; p.25 lines 9-25) for use in a data storage system (p.10 line 34 - p.11 line 15; p. 13 lines 27 - p.14 line 15), comprising:

a frame (18, Figures 1 & 2; p.14 line 16 - p.16 line 8), said frame (18) having a

lower plate (22, Figures 3 & 6; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) and an upper plate (20, Figures 1, 2, & 5; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) positioned in generally parallel, spaced-apart relation (Figures 1-3; p.14 line 33 - p.15 line 15), said lower and upper plates (22 and 20) of said frame (18) having a plurality of sets of mounting locations (28, 30, 32, p.14 line 16-32; p.16 lines 9-28) provided thereon so that said frame (18) defines a first component configuration (12, Figure 1, p.7 lines 5-26; p.14 line 16 - p.15 line 15) and a second component configuration (14, Figure 2, p.7 line 27 - p.8 line 2; p.14 line 16 - p.15, line 15), the first component configuration (12) comprising:

first cartridge receiving means (34, Figures 1 & 4; p.8 lines 3-14; p.17 line 9- p.19 line 16; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 lines 15-28) mounted to said frame (18) for receiving at least one data cartridge (56, Figure 1; p.13 line 27 - p.14 line 6); and

second cartridge receiving means (36, Figures 1 & 4; p. 8 lines 3-14; p.19 line 26 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 line 31 - p.5 line 8) mounted to said frame (18) for receiving said at least one data cartridge (56), wherein said first and second cartridge receiving means (34 and 36) are located (p.7 lines 5-26; p.8 line 30 - p.9 line 16; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p. 2 line 23 - p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the first component configuration (12);

the second component configuration (14) comprising third cartridge receiving means (46; Figure 2; p.7 line 27 - p.8 line 2; p.22 line 34 - p.25 line 8) mounted to said frame (18) for receiving said at least one data cartridge (56), said third cartridge receiving means (46)

in said second component configuration (14) replacing (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) said first and second cartridge receiving means (34 and 36) in said first component configuration (12) and vice-versa (p.9 lines 17-25; p.25 line 26 - p.26 line 5) so that a volumetric space (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) occupied by said first and second cartridge receiving means (34 and 36) in said first configuration (14) is substantially occupied (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) by said third cartridge receiving means (46) in said second configuration (14) and vice-versa (p.9 lines 17-25; p.25 line 26 - p.26 line 5), wherein said third cartridge receiving means (46) is located (Figure 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16; 2<sup>nd</sup> Amend. p.2 line 23 - p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the second component configuration (14).

**(Claim 20)**

A method (p.9 line 17 - p.10 line 2; p. 25 line 26 - p.26 line 13; 2<sup>nd</sup> Amend. p. 3 lines 14-26), comprising:

providing a frame (18, Figures 1 & 2; p.14 line 16 - p.16 line 8) having a lower plate (22, Figures 3 & 6; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) and an upper plate (20, Figures 1, 2, & 5; p. 6 line 21 - p. 7 line 26; p. 14 line 16 - p. 15 line 15; p. 18 line 27 - p. 19 line 16; p. 20 line 16 - p. 21 line 29) positioned in generally parallel, spaced-apart relation (Figures 1-3; p.14 line 33 - p.15 line 15), said lower and upper plates (22 and 20) of said frame (18) having a plurality of sets of mounting locations (28, 30, 32, p.14 line 16-32; p.16 lines 9-28) thereon;

defining a first component configuration (12, Figure 1, p.7 lines 5-26; p.14 line 16 -

p.15 line 15) by mounting a first cartridge receiving device (34, Figures 1 & 4; p.8 lines 3-14; p.17 line 9- p.19 line 16; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 lines 15-28) to a first set (28, Figure 5) of the plurality of sets of mounting locations (28, 30, 32) provided on said frame (18) and by mounting a second cartridge receiving device (36, Figures 1 & 4; p. 8 lines 3-14; p.19 line 26 - p.22 line 24; 2<sup>nd</sup> Amend. p.4 line 31 - p.5 line 8) to a second set (30, Figure 1; p. 21 lines 2-29) of the plurality of sets of mounting locations (28, 30, 32) provided on said frame (18) so that the second cartridge receiving device (36) is located (p.7 lines 5-26; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p. 2 line 23 - p.3 line 10) adjacent the first cartridge receiving device (34), wherein said first and second cartridge receiving devices (34 and 36) are located (p.7 lines 5-26; p.8 line 30 - p.9 line 16; p.21 line 30 - p.22 line 24; 2<sup>nd</sup> Amend. p. 2 line 23 - p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the first component configuration (12); or, in the alternative,

defining a second component configuration (14, Figure 2, p.7 line 27 - p.8 line 2; p.14 line 16 - p.15, line 15) by mounting a third cartridge receiving device (46; Figure 2; p.7 line 27 - p.8 line 2; p.22 line 34 - p.25 line 8) to a third set (32, Figure 2) of the plurality of sets of mounting locations (28, 30, 32) provided on said frame (18), said third cartridge receiving device (46) in the second component configuration (14) substantially replacing (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) said first and second cartridge receiving devices (34 and 36) in the first component configuration (12) and vice-versa (p.9 lines 17-25; p.25 line 26 - p.26 line 5), so that a volumetric space (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16) occupied by said first and second cartridge receiving devices (34 and 36) in the first component configuration (12) is substantially occupied (Figures 1 & 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16)

by said third cartridge receiving device (46) in the second component configuration (14) and vice-versa (p.9 lines 17-25; p.25 line 26 - p.26 line 5), wherein said third cartridge receiving device (46) is located (Figure 2; p.7 line 27 - p.8 line 2; p.8 line 30 - p.9 line 16; 2<sup>nd</sup> Amend. p.2 line 23 - p.3 line 10) substantially between the upper and lower plates (20 and 22) of said frame (18) when said frame (18) is in the second component configuration (14).

### **ISSUE**

Whether claims 1-6 and 10-20 are unpatentable under 35 U.S.C. §103(a) as being obvious over Menke, *et al.*, U.S. Patent No. 5,841,744 (Menke).

### **GROUPING OF THE CLAIMS**

Claims 1, 2, 4, 10, 11, 13, 14, and 20 are independently patentable, as set forth in the Argument. Claims 3, 5, and 6 stand or fall with claim 1. Claim 12 stands or falls with claim 10. Claims 15-19 stand or fall with claim 14.

### **ARGUMENT**

#### **Opening Statement**

The examiner's obviousness rejections are improper in that Menke fails to provide the suggestion or incentive required to modify Menke in a manner that would make obvious the pending claims. Therefore, the examiner has failed to establish the required *prima-facie* case of obviousness.

#### **Procedural Posture:**

The arguments presented herein are based on the presumption that the rejections in the



final office action, paper no. 15, dated October 14, 2003, are based solely on Menke and not on any other reference. Appellants' believe this presumption to be warranted in that section 2 of the final office action specifically rejects claims 1-6 and 10-20 under Section 103(a) as being obvious over Menke only. However, in the section entitled "Response to Arguments" in the final office action, the examiner includes a discussion of another reference namely, Dankman, et al., U.S. Patent No. 5,491,609. This discussion of Dankman appears to be irrelevant in that the examiner has not relied on Dankman to support a rejection since the office action of June 24, 2002 (paper no. 5). Since that June 24, 2002, office action, the examiner has issued three (3) subsequent office actions that have not relied on Dankman. Specifically, the three (3) subsequent office actions are dated January 6, 2003 (paper no. 9); May 5, 2003 (paper no. 13); and October 14, 2003 (the final office action, paper no. 15). In fact, in the office action of January 6, 2003 (paper no. 9), the examiner specifically stated on page 8 that "applicant's arguments with respect to Dankman et al. have been considered but are moot in view of the new ground(s) of rejection."

Therefore, because the examiner has not specifically cited Dankman in support of the current obviousness rejections, and because it appears that the examiner considers any discussion of Dankman to be "moot in view of the new ground(s) of rejection," Appellants do not address Dankman herein.

**ISSUE:      Whether claims 1-6 and 10-20 are unpatentable under 35 U.S.C. §103.**

**Legal Standard For Rejecting Claims**  
**Under 35 U.S.C. §103**

The test for obviousness under 35 U.S.C. §103 is whether the claimed invention would have been obvious to those skilled in the art in light of the knowledge made available by the

reference or references. *In re Donovan*, 184 USPQ 414, 420, n. 3 (CCPA 1975). It requires consideration of the entirety of the disclosures of the references. *In re Rinehart*, 189 USPQ 143, 146 (CCPA 1976). All limitations of the claims must be considered. *In re Boe*, 184 USPQ 38, 40 (CCPA 1974). In making a determination as to obviousness, the references must be read without benefit of applicant's teachings. *In re Meng*, 181 USPQ 94, 97 (CCPA 1974). In addition, the propriety of a Section 103 rejection is to be determined by whether the reference teachings appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination, or other modifications. *In re Lintner*, 173 USPQ 560, 562 (CCPA 1972).

A basic mandate inherent in Section 103 is that a piecemeal reconstruction of prior art patents shall not be the basis for a holding of obviousness. It is impermissible within the framework of Section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. *In re Kamm*, 172 USPQ 298, 301-302 (CCPA 1972). Put somewhat differently, the fact that the inventions of the references and of the applicant may be directed to concepts for solving the same problem does not serve as a basis for arbitrarily choosing elements from references to attempt to fashion applicant's claimed invention. *In re Donovan, supra*, at 420.

In the case of *In re Wright*, 6 USPQ2d 1959 (Fed. Cir. 1988) (restricted on other grounds by *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), the Court of Appeals for the Federal Circuit decided that the Patent Office had improperly combined references which did not suggest the properties and results of the applicants' invention nor suggest the claimed combination as a solution to the problem which applicants' invention solved. The CAFC reached this conclusion after an analysis of the prior case law, at p. 1961:

“We repeat the mandate of 35 U.S.C. § 103: it is the invention as a whole that must be considered in obviousness determinations. The invention as a whole embraces the structure, its properties, and the problem it solves. See, e.g., *Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1025, 226 USPQ 881, 886 (Fed. Cir. 1985) (“In evaluating obviousness, the hypothetical person of ordinary skill in the pertinent art is presumed to have the ‘ability to select and utilize knowledge from other arts reasonably pertinent to [the] particular problem’ to which the invention is directed”), quoting *In re Angle*, 444 F.2d 1168, 1171-72, 170 USPQ 285, 287-88 (CCPA 1971); *In re Antonie*, 559 F.2d 618, 619, 195 USPQ 6, 8 (CCPA 1977) (“In delineating the invention as a whole, we look not only at the claim in question... but also to those properties of the subject matter which are inherent in the subject matter **and** are disclosed in the Specification”) (emphasis in original).

The determination of whether a novel structure is or is not “obvious” requires cognizance of the properties of that structure and the problem which it solves, viewed in light of the teachings of the prior art. See, e.g., *In re Rinehart*, 531 F.2d 1048, 1054, 189 USPQ 143, 149 (CCPA 1976) (the particular problem facing the inventor must be considered in determining obviousness); see also *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984) (it is error to focus “solely on the product created, rather than on the obviousness or notoriousness of its creation”) (quoting *General Motors Corp. v. U.S. Int’l Trade Comm’n*, 687 F.2d 476, 483, 215 USPQ 484, 489 (CCPA 1982), cert. denied, 459 U.S. 1105 (1983)).

Thus the question is whether what the inventor did would have been obvious to one of ordinary skill in the art attempting to solve the problem upon which the inventor was working. *Rinehart*, 531 F.2d at 1054, 189 USPQ at 149; see also *In re Benno*, 768 F.2d 1340, 1345, 226 USPQ 683, 687 (Fed. Cir. 1985) (“appellant’s problem” and the prior art present different problems requiring different solutions”).

More recently, the CAFC has reiterated the necessity that motivation be identified in choosing to combine prior art references for an obviousness type rejection. As stated by the Court of Appeals for the Federal Circuit in *In re Rouffet*, 47 USPQ2d 1453 (Fed. Cir. 1998) at 1457:

“[V]irtually all [inventions] are combinations of old elements.” *Environmental Designs, Ltd. V. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983) (“Most, if not all, inventions are combinations and mostly of old elements.”). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability

of the claimed invention. Such an approach would be “an illogical and inappropriate process by which to determine patentability.” *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed.Cir. 1996).

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.”

A reference which teaches away from the applicant’s invention may not properly be used in framing a 35 U.S.C. §103 rejection of applicant’s claims. See *United States v. Adams*, 148 USPQ 429 (1966).

A patentable invention, within the ambit of 35 U.S.C. Section 103, may result even if the inventor has, in effect, merely combined features, old in the art, for their known purpose, without producing anything beyond the results inherent in their use. See *In re Sponnoble*, 405 F.2d 578, 56 CCPA 823 (CCPA 1969). In the case of *In re Sponnoble, supra*, the sole issue was whether the board was correct in holding that, at the time of the invention, appellant’s claimed invention was obvious to one of ordinary skill in the art in view of the prior art references. The court agreed with the appellant and found that the invention was not obvious:

“It should not be necessary for this court to point out that a patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the ‘subject matter as a whole’ which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103. *In re Antonson*, 272 F.2d 948, 47 CCPA 740 (CCPA 1959); *In re Linnert*, 309 F.2d 498, 50 CCPA 753 (CCPA 1962). The court must be ever alert not to read obviousness into an invention on the basis of the applicant’s own statements; that is, we must view the prior art without reading into that art appellant’s teachings. *In re Murray*, 268 F.2d 226, 46 CCPA 905 (CCPA 1959); *In re Sporck*, 301 F.2d 686, 49 CCPA 1039 (CCPA 1962). The issue, then, is whether the teachings of the prior art would, in and of themselves and without the benefits of appellant’s disclosure, make the invention as a whole, obvious. *In re Leonor*, 395 F.2d 801, 55 CCPA 1198 (CCPA 1968).”

*In re Sponnoble, supra*, at 832.

### **The Examiner's Rejections**

The examiner rejected claims 1-6 and 10-20 under 35 U.S.C. Section 103 as being unpatentable over Menke, *et al.*, U.S. Patent No. 5,841,744 (Menke). As Appellents understand it, the obviousness rejections are based on a "closed interpretation" of the claims. Under the so-called "closed interpretation" the term "substantially the same" of the claims is not met by Menke. That is, the claims are not anticipated by Menke. However, the Patent Office goes on to argue that it would have been obvious to one of ordinary skill in the art to "arrive at the claimed number of replaced parts in the course of routine experimentation and optimization as is notoriously well known in the art." See page 3 of the final office action, paper no. 15, dated October 14, 2003. This argument is erroneous in that Menke fails to provide the suggestion or motivation to so modify his device.

It is well-established patent law that when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. *In re Kotzab*, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000). Moreover, the hypothetical "person having ordinary skill in the art" is a person that thinks along the lines of conventional wisdom and is not one who undertakes to innovate, whether by extraordinary insights or by patient and often expensive systematic research. *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 227 USPQ 293 (Fed. Cir. 1985).

Claim 1 is directed to a "reconfigurable cartridge processing module" comprising a frame that defines first and second component configurations. The first component configuration comprises first and second cartridge receiving devices that together occupy "a volumetric space

within said frame.” The second component configuration comprises a third cartridge receiving device that occupies “substantially the same volumetric space within said frame as is occupied by said first and second cartridge receiving devices in said first component configuration.”

While Menke discloses a device for playing, recording, and issuing discs, and discloses in Figures 20 and 21 that an upper “magazine 4” may be replaced by three “running gears 5,” Menke does not disclose a “reconfigurable cartridge processing module” having a frame that defines first and second component configurations as specifically required by claim 1. More importantly, Menke fails to even suggest the arrangement of claim 1, that is, a reconfigurable cartridge processing module having a frame that defines first and second component configurations wherein a third cartridge receiving device occupies “substantially the same volumetric space within said frame as is occupied by said first and second cartridge receiving devices.”

While the examiner argues that it would have been obvious to change the claimed number of replaced parts in the course of routine experimentation, the fact remains that Menke makes no such suggestion. As the Court of Appeals for the Federal Circuit made clear in *In re Kotzab, supra*, a single prior art reference can only make obvious a pending patent claim if that single reference contains a suggestion or motivation to modify the teachings of the reference. Because Menke fails to suggest this modification, Menke cannot support an obviousness rejection under *In re Kotzab, supra*.

Moreover, because the hypothetical person having ordinary skill in the art is one who thinks along the lines of conventional wisdom, such a person would find no motivation in Menke to modify Menke’s system to create the reconfigurable cartridge processing module of claim 1. Put another way, if Menke, who was inclined to innovate (i.e., to not think along the lines of conventional wisdom) failed to appreciate the modification and did not incorporate a

“reconfigurable cartridge processing module” meeting the limitations of claim 1 in his own device, it cannot be said that a person not inclined to innovate would make such a modification and incorporate such a reconfigurable cartridge processing module in a hypothetical device.

Another factor establishing the non-obviousness of claim 1 relates to the fact that a patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. *In re Spinnoble, supra*. This is part of the ‘subject matter as a whole’ which should always be considered in determining the obviousness of an invention under Section 103. *In re Antonson, supra*. The present invention recognizes a problem of storage utilization if a full-width cartridge receiving device is replaced with a half-width device. Namely, such a replacement leaves space unused. The present invention recognizes that this is a problem and solves it by providing a reconfigurable cartridge processing module that defines two component configurations. One of the component configurations allows a full-width cartridge receiving device to be mounted to the cartridge processing module. The other component configuration allows two half-width cartridge storage devices to be mounted to the cartridge processing module while occupying substantially the same volumetric space. As a consequence, the data cartridge storage capacity of the data storage system is increased without adding any additional volumetric space to the data storage system. See, for example, the description contained on page 9, lines 5-16 of the present application. Menke does not even recognize this problem, much less disclose a solution to it that meets the limitations of claim 1. Therefore, claim 1 cannot be obvious over Menke under the holding of *In re Spinnoble, supra*.

Dependent claim 2 is allowable by virtue of the fact that it depends from claim 1, which is allowable. Claim 2 is also independently allowable in that Menke fails to disclose a reconfigurable cartridge processing module of claim 1, wherein the “first cartridge receiving

device comprises a half-width cartridge read/write device.”

Dependent claim 3 is allowable because it depends from claim 1, which is allowable.

Dependent claim 4 is allowable in that it depends from claim 1, which is allowable. Claim 4 is also independently allowable in that Menke fails to disclose a reconfigurable cartridge processing module of claim 1, wherein the “third cartridge receiving device comprises a full-width cartridge read/write device.”

Dependent claims 5 and 6 are allowable because they depend from claim 1, which is allowable.

Independent claim 10 is allowable over Menke for the same reasons discussed above with respect to claim 1. That is, Menke fails to provide within its four corners the suggestion or incentive required to allow a person having ordinary skill in the art to modify Menke so as to create a “reconfigurable cartridge processing module” having a frame that defines “a first component configuration and a second component configuration” wherein a “third cartridge receiving device in said second component configuration” substantially replaces “said first and second cartridge receiving devices in said first component configuration and vice-versa, so that a volumetric space occupied by said first and second cartridge receiving devices in said first component configuration is substantially occupied by said third cartridge receiving device in said second component configuration and vice-versa.” Menke cannot be used to make the required *prima-facie* case of obviousness under *In re Kotzab, supra*, because Menke fails to contain a clear suggestion or motivation to modify the teachings of Menke in the manner required by claim 10. Moreover, because Menke fails to even recognize the problems solved by the present invention, much less disclose a solution to those problems, Menke cannot support a *prima-facie* case of obviousness of claim 10 under the holding in *In re Spinnoble, supra*.



Dependent claim 11 is allowable by virtue of the fact that it depends from claim 10, which is allowable. Claim 11 is also independently allowable in that Menke fails to disclose a reconfigurable cartridge processing module of claim 10, wherein the “first cartridge receiving device comprises a half-width cartridge read/write device.”

Dependent claim 12 is allowable because it depends from claim 10, which is allowable.

Dependent claim 13 is allowable in that it depends from claim 10, which is allowable. Claim 13 is also independently allowable in that Menke fails to disclose a reconfigurable cartridge processing module of claim 10, wherein the “third cartridge receiving device comprises a full-width cartridge read/write device.”

Independent claim 14 is also allowable over Menke for substantially the same reasons as set forth above for claims 1 and 10. That is, Menke fails to disclose teachings sufficient to suggest or motivate a person having ordinary skill in the art to modify Menke so as to create a “reconfigurable cartridge processing module” having a frame that defines first and second component configurations wherein a “third cartridge receiving means” (in the second component configuration) occupies “substantially the same volumetric space within said frame as is occupied by said first and second cartridge receiving means in said first component configuration.” That is, the teachings of Menke are insufficient to make out the required *prima-facie* case of obviousness under *In re Kotzab, supra*. Moreover, because Menke, who was inclined to innovate and not think along the lines of conventional wisdom, failed to appreciate the modification and did not incorporate it in his own device, it cannot be said that a person not inclined to innovate would make such a modification. In addition, because Menke fails to even recognize the problems solved by the present invention, much less disclose a solution to those problems, Menke cannot support a *prima-facie* case of obviousness of claim 14 under the holding in *In re*

*Sponnoble, supra.*

Dependent claims 15-19 are allowable because they depend from claim 14, which is allowable.

Method claim 20 is also allowable over Menke for substantially the same reasons as set forth above for claims 1, 10, and 14. That is Menke fails to provide the suggestion or incentive required to allow a person having ordinary skill in the art, and with no inclination to innovate, to modify Menke in a manner that would create a method of defining a first component configuration by mounting first and second cartridge receiving devices to the frame and a second component configuration by mounting a third cartridge receiving device to the frame, the third cartridge receiving device “substantially replacing” the first and second cartridge receiving devices in the first configuration “so that a volumetric space occupied by said first and second cartridge receiving devices in the first component configuration is substantially occupied by said third cartridge receiving device in the second component configuration and vice-versa.” Because Menke does not contain within its four corners a clear suggestion or motivation to modify its teachings in a manner that would create the invention defined by claim 20, Menke cannot make claim 20 *prima-facie* obvious under the holding of *In re Kotzab, supra*. Furthermore, because Menke fails to even recognize the problems solved by the present invention, much less disclose a solution to those problems, Menke cannot support a *prima-facie* case of obviousness of claim 20 under the holding in *In re Sponnoble, supra*.

### **CONCLUSION**

The obviousness rejections of claims 1-6 and 10-20 cannot stand because Menke fails to provide the suggestion or incentive required to modify Menke in a manner that would make

obvious the pending claims. Accordingly, the examiner has failed to establish the required *prima-facie* case of obviousness. Therefore, appellants respectfully request the Board to remove the rejections of claims 1-6 and 10-20.

Respectfully submitted,

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## APPENDIX A

1. A reconfigurable cartridge processing module for use in a data storage system, comprising:

a frame, said frame having a lower plate and an upper plate positioned in generally parallel, spaced-apart relation, said lower and upper plates of said frame having a plurality of sets of mounting locations provided thereon so that said frame defines a first component configuration and a second component configuration, the first component configuration comprising:

a first cartridge receiving device mounted to a first set of the plurality of sets of mounting locations provided on said frame so that said first cartridge receiving device is located at a first position within said frame; and

a second cartridge receiving device mounted to a second set of the plurality of sets of mounting locations provided on said frame so that said second cartridge receiving device is located at a second position within said frame, said first and second cartridge receiving devices together occupying a volumetric space within said frame, wherein said first and second cartridge receiving devices are located substantially between the upper and lower plates of said frame when said frame is in the first component configuration;

the second component configuration comprising a third cartridge receiving device mounted to a third set of the plurality of sets of mounting locations provided on said frame, said third cartridge receiving device occupying substantially the same volumetric space within said frame as is occupied by said first and second cartridge receiving devices in said first component configuration, wherein said third cartridge receiving device is located substantially between the upper and lower plates of said frame when said frame

is in the second component configuration.

2. The reconfigurable cartridge processing module of claim 1, wherein said first cartridge receiving device comprises a half-width cartridge read/write device.

3. The reconfigurable cartridge processing module of claim 1, wherein said second cartridge receiving device comprises a cartridge storage magazine.

4. The reconfigurable cartridge processing module of claim 1, wherein said third cartridge receiving device comprises a full-width cartridge read/write device.

5. The reconfigurable cartridge processing module of claim 1, wherein the second position is located adjacent the first position so that said second cartridge receiving device is located adjacent said first cartridge receiving device when said frame is in the first component configuration.

6. The reconfigurable cartridge processing module of claim 1, wherein the second position is located alongside the first position so that said second cartridge receiving device is located alongside said first cartridge receiving device when said frame is in the first component configuration.

7. Cancelled

8. Cancelled

9. Cancelled

10. A reconfigurable cartridge processing module for use in a data storage system, comprising:

a frame, said frame having a lower plate and an upper plate positioned in generally parallel, spaced-apart relation, said lower and upper plates of said frame having a plurality of sets of mounting locations provided thereon so that said frame defines a first component configuration and a second component configuration, the first component configuration comprising:

a first cartridge receiving device mounted to a first set of the plurality of sets of mounting locations provided on said frame so that said first cartridge receiving device is located at a first position within said frame; and

a second cartridge receiving device mounted to a second set of the plurality of sets of mounting locations provided on said frame so that said second cartridge receiving device is located at a second position within said frame, the second position being located adjacent the first position so that said second cartridge receiving device is located alongside said first cartridge receiving device, wherein said first and second cartridge receiving devices are located substantially between the upper and lower plates of said frame when said frame is in the first component configuration;

the second component configuration comprising a third cartridge receiving device mounted to a third set of the plurality of sets of mounting locations provided on said frame, said third cartridge receiving device in said second component configuration

substantially replacing said first and second cartridge receiving devices in said first component configuration and vice-versa, so that a volumetric space occupied by said first and second cartridge receiving devices in said first component configuration is substantially occupied by said third cartridge receiving device in said second component configuration and vice-versa, wherein said third cartridge receiving device is located substantially between the upper and lower plates of said frame when said frame is in the second component configuration.

11. The reconfigurable cartridge processing module of claim 10, wherein said first cartridge receiving device comprises a half-width cartridge read/write device.

12. The reconfigurable cartridge processing module of claim 10, wherein said second cartridge receiving device comprises a cartridge storage magazine.

13. The reconfigurable cartridge processing module of claim 10, wherein said third cartridge receiving device comprises a full-width cartridge read/write device.

14. A reconfigurable cartridge processing module for use in a data storage system, comprising:

a frame, said frame having a lower plate and an upper plate positioned in generally parallel, spaced-apart relation, said lower and upper plates of said frame having a plurality of sets of mounting locations provided thereon so that said frame defines a first component configuration and a second component configuration, the first component configuration comprising:

first cartridge receiving means mounted to said frame for receiving at least one data cartridge; and

second cartridge receiving means mounted to said frame for receiving said at least one data cartridge, wherein said first and second cartridge receiving means are located substantially between the upper and lower plates of said frame when said frame is in the first component configuration;

the second component configuration comprising third cartridge receiving means mounted to said frame for receiving said at least one data cartridge, said third cartridge receiving means in said second component configuration replacing said first and second cartridge receiving means in said first component configuration and vice-versa so that a volumetric space occupied by said first and second cartridge receiving means in said first configuration is substantially occupied by said third cartridge receiving means in said second configuration and vice-versa, wherein said third cartridge receiving means is located substantially between the upper and lower plates of said frame when said frame is in the second component configuration.

15. The reconfigurable cartridge processing module of claim 14, wherein said second cartridge receiving means is mounted adjacent said first cartridge receiving means when said frame means is in the first component configuration.

16. The reconfigurable cartridge processing module of claim 14, wherein said second cartridge receiving means is mounted alongside said first cartridge receiving means when said frame means is in the first component configuration.



17. The reconfigurable cartridge processing module of claim 14, wherein said first cartridge receiving means comprises cartridge read/write means for reading data from and writing data to said at least one data cartridge.

18. The reconfigurable cartridge processing module of claim 14, wherein said second cartridge receiving means comprises cartridge storage magazine means for storing said at least one data cartridge.

19. The reconfigurable cartridge processing module of claim 14, wherein said third cartridge receiving means comprises cartridge read/write means for reading data from and writing data to said at least one data cartridge.

20. A method, comprising:

providing a frame having a lower plate and an upper plate positioned in generally parallel, spaced-apart relation, said lower and upper plates of said frame having a plurality of sets of mounting locations thereon;

defining a first component configuration by mounting a first cartridge receiving device to a first set of the plurality of sets of mounting locations provided on said frame and by mounting a second cartridge receiving device to a second set of the plurality of sets of mounting locations provided on said frame so that the second cartridge receiving device is located adjacent the first cartridge receiving device, wherein said first and second cartridge receiving devices are located substantially between the upper and lower plates of said frame when said frame is in the first component configuration; or, in the alternative,

defining a second component configuration by mounting a third cartridge receiving device to a third set of the plurality of sets of mounting locations provided on said frame, said third cartridge receiving device in the second component configuration substantially replacing said first and second cartridge receiving devices in the first component configuration and vice-versa, so that a volumetric space occupied by said first and second cartridge receiving devices in the first component configuration is substantially occupied by said third cartridge receiving device in the second component configuration and vice-versa, wherein said third cartridge receiving device is located substantially between the upper and lower plates of said frame when said frame is in the second component configuration.

## **APPENDIX B**

### **Reference Relied on By Examiner in the Final Response.**

Copies of the following reference are attached hereto for the Board's convenience:

1. Menke *et al.*, U.S. Patent No. 5,841,744, issued November 24, 1998, entitled  
“Device for Playing, Recording, and Issuing Discs.”